What is claimed is:

1.   A secondary cell charging apparatus which uses a computer apparatus as a part of construction elements of said charging apparatus.

5 2.   A secondary cell charging apparatus according to claim 1,wherein said apparatus comprising a charger for a secondary cell using an internal power supply circuit of a PC as a power supply required for a charging operation.

3.   A secondary cell charging apparatus according to claim 1 or 2, wherein said PC is selected from a group of a general-purpose PC including a desktop PC, a laptop PC, a mobile type PC, a dedicated game-use PC, and a TV PC with a bi-directional communication capability.

4.   A secondary cell charging apparatus according to any one of claims 1 to 3, wherein said charger is either a charging processing operation program required for a charging operation on a secondary cell or is an apparatus into which a charging processing operation program required for a charging operation to a secondary cell is built.

20 5.   A secondary cell charging apparatus according to any one of claim 1 to claim 4, wherein said charger is provided within said PC or provided external thereto.

6.   A secondary cell charging apparatus according to any one of claim 1 to claim 5, wherein said charger is connected to a battery holding apparatus, which holds at least a secondary cell requiring charging processing.

7.   A secondary cell charging apparatus according to any one of claim 1 to claim 5, wherein said PC is provided with a driving controlling program for driving a charging

controlling program installed in said charger.

8.   A secondary cell charging apparatus according to any one of claim 1 to claim 7, wherein said apparatus configured so that by operating a controlling-condition-inputting

5 means consisting of either a key-board or a mouse of a PC, at lease one of information selected from a group of charging processing information, charging processing condition, information of a battery to be charged, situation of charging process proceeding, charging history or the like is selected

10 so as to make a control based upon the selected information and the result thereof being displayed on said display means of said PC.

9.   A secondary cell charging apparatus according to any one of claim 1 to claim 8 wherein said charging processing

15 operation program is made separately based upon kinds of batteries,   models   thereof   or   applications   thereof, respectively

10.   A secondary cell charging apparatus according to any one of claim 1 to claim 9, wherein an apparatus that forms

20 the charger which is selected from a group consisting of an international PCI (PC interface) standard selecting from either one of a PCI board or PCI card each including said charging processing operation program therein, an IC chip mounted on an expansion board or the like, a CD-ROM,

25 a floppy disk, an IC card each including said charging processing operation program therein and a PC hard disk (HD) onto which said charging processing operation program has been installed.

11.   A secondary cell charging apparatus according to any

one of claim 1 to claim 10, wherein said charger is connected detachably to any one of output terminals of said internal power supply circuit of said PC, and is further connected either directly or indirectly, by an appropriate connector and/or cable to said battery holding apparatus.

12.   A secondary cell charging apparatus according to any one of claim 1 to claim 11, wherein said charger is connected to said power supply circuit of said PC through an internationally standardized interface such as a PCI or a USB of said PC.

13.   A secondary cell charging apparatus according to any one of claim 1 to claim 12, wherein said battery holding apparatus is connected to said charger provided with a chip into which said charging processing operation program being installed therein and mounted on a board which is inserted into a board insertion slit of said PC, through an appropriate connector and/or cable.

14.   A secondary cell charging apparatus according to any one of claim 1 to claim 13, wherein in a case in which said charger is provided within said PC, said charger is connected to said internal power supply circuit of said PC, and is connected to said battery holding apparatus either directly via a signal output of said PC, or indirectly connected thereto, via a signal output of said PC, utilizing an appropriate connector and/or cable.

15.   A secondary cell charging apparatus according to any one of claim 1 to claim 13, wherein in a case in which said charger is provided outside of said PC, said charger is connected to said internal power supply circuit of said PC

through said board inserted into said board insertion slit
or through said USB connector provided with said PC.

16. A secondary cell charging apparatus according to any
one of claim 1 to claim 15, wherein said international PCI
5 (PC interface) standard selecting from either one of a PCI
board or PCI card, each including said charging processing
operation program therein, an IC chip mounted on an expansion
board or the like, a CD-ROM, a floppy disk, an IC card each
including said charging processing operation program therein
10 or a PC hard disk (HD) onto which said charging processing
operation program has been installed, is individually
produced based upon kinds of batteries, model thereof,
applications therefor, or the like, respectively.

17. A secondary cell charging apparatus according to any
15 one of claim 1 to claim 16, wherein, said battery holding
apparatus includes a holder part configured so as to enable
acceptance and a charging processing operation separately on
one or a plurality of secondary cell of various sizes
requiring charging processing.

20 18. A secondary cell charging apparatus according to any
one of claim 1 to claim 17, wherein said battery holding
apparatus includes a stand part configured so as to enable
acceptance and a charging processing operation of a cell
package in which a plurality of secondary cell of the same
25 size being packaged therewithin, or directly of a cellular
telephone with said pack built thereinto, directly.

19. A secondary cell charging apparatus according to
claim 17 or claim 18, wherein said secondary cell holder part
or stand part thereof is formed so as to match the dimensions

or shape of each individual secondary cell.

20. A secondary cell charging apparatus according to claim 18 or claim 19, wherein said secondary cell holder part or stand part is formed so as to match the dimensions or shape of all said secondary cells.

21. A secondary cell charging apparatus according to any one of claim 1 to claim 20, wherein said secondary cell charging processing operation program executes high-speed charging processing.

22. A secondary cell charging apparatus according claim 21, wherein said secondary cell charging processing operation program executes charging with a charging current of at least 2C.

23. A secondary cell charging apparatus according to claim 10, wherein said charging processing operation program included in said charger is either built into said PC by inserting a floppy disk, a CD-ROM, or an IC card containing said charging processing operation program into a prescribed location of said PC, or by inserting a PCI board onto which an IC chip containing said charging processing operation program has been mounted into an expansion slot of said PC.

24. A secondary cell charging apparatus according to any one of claim 1 to claim 23, wherein wherein each of said charging processing operation program is created so as to have a respective charging process operation condition of a secondary cell to be subjected to charging processing, being different from each other based upon at least one factor among a secondary cell manufacturer name, secondary cell type,

model, construction, quantity, battery capacity, and internal resistance and the like .

25.   A secondary cell charging apparatus according to any one of claim 1 to claim 24, wherein said charging processing operation program has a function to distinguish at least one information selected from a group of information consisting a manufacturer name, secondary cell type, model, construction, quantity, battery capacity, and internal resistance and the like of a secondary cell requiring charging processing inserted in said battery holding apparatus.

26.   A secondary cell charging apparatus according to claim 25, wherein said charger automatically selects a charging processing operation program having the most suitable charging processing condition to said secondary cell battery to be charged, among a plurality of charging processing operation program stored in said charger utilizing information about the secondary cell battery to be charged and distinguished by said PC, its-self or separate information about the secondary cell battery to be charged which is input into said PC by a user utilizing said inputting means.

27.   A secondary cell charging apparatus according to any one of claim 1 to claim 26, wherein information regarding a secondary cell requiring charging processing and inserted into said battery holding apparatus is displayed on a display means of said PC.

28.   A secondary cell charging apparatus according to any one of claim 1 to claim 27, wherein a user uses an appropriate input means associated with said PC to input information

regarding a secondary cell requiring charging processing inserted in said battery holding apparatus, said information being displayed on a display means of said PC.

29.   A secondary cell charging apparatus according to any one of claim 1 to claim 28, wherein when a user uses an appropriate input means associated with said PC to input information regarding a secondary cell requiring charging processing inserted in said battery holding apparatus and display said information on said display means of said PC in a case in which at least one information being different from   information regarding a secondary cell requiring charging processing inserted in said battery holding apparatus is input, an alarm means is driven.

30.   A secondary cell charging apparatus according to any one of claim 1 to claim 29, wherein a user, based on information regarding a secondary cell requiring charging processing, sets various conditions necessary to be required for charging said secondary cell by selecting same from a large number of alternatives displayed on a display screen of said PC.

31.   A secondary cell charging apparatus according to any one of claim 1 to claim 30, wherein a predicted charging characteristics graph with regard to charging operation conditions for said selected secondary cell requiring charging processing can be displayed on said display means of said PC.

32.   A secondary cell charging apparatus according to any one of claim 1 to claim 31, wherein said predicted charging characteristics graph indicates a relationship between a

battery voltage and a charging time or a relationship between a battery temperature and a charging time.

33.   A secondary cell charging apparatus according to any one of claim 1 to claim 32, wherein a display means of said PC displays at least one information selected from a manufacturer name, a battery type, battery capacity, charging rate, and internal resistance and the like with regard to charging operation conditions for said selected secondary cell requiring charging processing, and displays information in that whether it distinguishes the start of charging or charging in progress.

34.   A secondary cell charging apparatus according to any one of claim 1 to claim 33, wherein a display means of said PC displays at least one information selected from a manufacturer name, a battery type, battery capacity, charging rate, and internal resistance and the like with regard to charging operation conditions for said selected secondary cell requiring charging processing, and separately displays either one of the start of charging or charging in progress and wherein said display means displays either a separate display of a battery voltage and battery temperature, which vary with the elapse of processing time, or a graph indicating a relationship between a battery voltage and a charging time or a relationship between a battery temperature and a charging time.

35.   A secondary cell charging apparatus according to any one of claim 1 to claim 34, wherein a notification means is provided which, after a start of a prescribed charging processing operation under selected charging conditions with

respect to a selected secondary cell requiring charging processing, in a case in which said charging operation is completed, makes notification to a user of said completion.
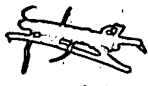
36.   A secondary cell charging apparatus according to any one of claim 1 to claim 35, wherein said charging processing operation program has separate settings of charging processing conditions for all secondary cell currently existing to be subjected to charging processing, respectively.

37.   A secondary cell charging apparatus according to any one of claim 1 to claim 36, wherein said charging processing operation program is created that is suitable for charging processing of a new secondary cell each time a new secondary cell is marketed, said program being added to an existing charging processing operation program by updating processing.
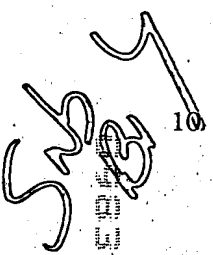
38.   A secondary cell charging apparatus according to any one of claim 1 to claim 37, wherein any one of a PCI board or PCI card each forming said PCI interface, a floppy disk, a CD-ROM, or an IC card each of which containing said updated charging processing operation program is distributed to a user for a fee or free-of-charge, said user updating said charging processing operation program in his or her PC with said new charging processing operation program.

39.   A secondary cell charging apparatus according to any one of claim 1 to claim 38, wherein said updated charging processing operation program is distributed to a user via a communication system including such as the Internet.

40.   A secondary cell charging apparatus according to

claim 39, wherein after a user, by means of a pre-established method, made a payment for said charging processing operation program for updating, said user downloads said charging processing operation program via the Internet, and updates

5   said charging processing operation program in his or her PC with said new charging processing operation program.

41.   A charging system comprising:

a PC comprising an internal power supply circuit;

a charger with a built-in charging processing

10   operation program using said internal power supply circuit of said PC as a power supply in a charging operation;

a display means connected to said PC;

an input means connected to said PC;

a controller for causing said PC to drive; and

15   an external power supply means for driving said PC.

42.   A charging system according to claim 41, further comprising a battery holding apparatus connected directly or indirectly to said charger, said battery holding apparatus includes either a holder part configured so as to enable

20   acceptance and a charging processing operation separately on one or a plurality of secondary cell of various sizes requiring charging processing, or a stand part configured so as to enable acceptance and a charging processing operation of a plurality of secondary cell to be charged of the same

25   size packaged within a prescribed pack, or directly of a cellular telephone with said pack built thereinto.

43.   A charging system according to claim 42, wherein a charging processing operation program either built into said PC or stored in said charger externally connected to PC

performs high-speed charging processing.

44.   A charging system according to claim 43, wherein said secondary cell charging processing operation program executes charging with a charging current of at least 2C.

5   45.   A charging system according to any one of claim 41 to claim 43, wherein said charging processing operation program is built into said PC by inserting a floppy disk, a CD-ROM, or an IC card each containing said charging processing operation program therein, into a prescribed

10   location of said PC, or by inserting a PCI board onto which an IC chip or PCI card each containing said charging processing operation program has been mounted into an expansion slot of said PC.

46.   A charging system according to any one of claim 41 to

15   claim 45, wherein said charger is connected detachably to any one of output terminals of said internal power supply circuit of said PC, and is further connected either directly or indirectly, by an appropriate connector and/or cable to said battery holding apparatus.

20   updated charging processing operation program is distributed

47.   A charging system according to any one of claim 41 to claim 46, wherein said charger is connected to said power supply circuit of said PC through an internationally standardized interface such as a PCI or a USB of said PC.

25   48.   A charging system according to claim 45, wherein each of said charging processing operation program has mutually different charging processing conditions from each other as set for at least one factor among a secondary cell manufacturer name, secondary cell type, model, construction,

quantity, battery capacity, and internal resistance and the like of a secondary cell to be subjected to charging processing.

49.   A charging system according to any one of claim 41 to claim 48, wherein said charging processing operation program has a function to distinguish at least one information selected from a group of information consisting of a manufacturer name, secondary cell type, model, construction, quantity, battery capacity, and internal resistance and the like of a secondary cell requiring charging processing inserted in said battery holding apparatus , and further wherein said program having a function in that said distinguished information about said secondary cell battery is displayed on said display means.

50.   A charging system according to any one of claim 41 to claim 49, wherein said input means is used to display on said display means information regarding a secondary cell requiring charging processing inserted into said battery holding apparatus.

51.   A charging system according to any one of claim 41 to claim 50, wherein a user, based on information regarding a secondary cell requiring charging processing, sets various conditions necessary to be required for charging said secondary cell by selecting same from a large number of alternatives displayed on a display screen of said PC.

52.   A charging system according to any one of claim 41 to claim 51, wherein, from information regarding said secondary cell requiring charging processing recognized by said PC, or from information regarding said secondary cell

requiring charging processing input by a user via said input means, a charging processing operation program having charging processing conditions most suited for said secondary cell required charging processing is selected from a

5   plurality of charging processing operation programs stored within said charger.

53.   A charging system according to any one of claim 41 to claim 52, wherein either various information regarding optimum charging operation conditions for a selected

10   secondary cell requiring charging processing or a predicted charging characteristics graph with regard to charging operation conditions for said selected secondary cell requiring charging processing can be displayed on said display means of said PC.

15   54.   A charging system according to claim 53, wherein said predicted charging characteristics graph indicates a relationship between a battery voltage and a charging time or a relationship between a battery temperature and a charging time.

20   55.   A charging system according to any one of claim 41 to claim 54, wherein a display means of said PC displays a battery type, battery capacity, charging rate, and internal resistance and the like with regard to charging operation conditions for said selected secondary cell requiring

25   charging processing, and displays whether it distinguishes the start of charging or charging in progress, and further displays during said charging operation on said secondary cell either a separate display of a battery voltage and battery temperature, which vary with the elapse of processing

time, or a graph indicating a relationship between a battery voltage and a charging time or a relationship between a battery temperature and a charging time.

56. A charging system according to any one of claim 41 to claim 55, wherein a notification means is provided which, after a start of a prescribed charging processing operation under selected charging conditions with respect to a selected secondary cell requiring charging processing, in a case in which said charging operation is completed, makes notification to a user of said completion.

57. A charging system according to any one of claim 41 to claim 56, wherein said charging processing operation program has a separate settings of charging processing conditions for all secondary cell currently existing to be subjected to charging processing , respectively.

58. A charging system according to any one of claim 41 to claim 57, wherein said charging processing operation program is created that is suitable for charging processing of a new secondary cell each time a new secondary cell is marketed, said program being added to an existing charging processing operation program by updating processing.

59. A charging system according to any one of claim 41 to claim 58, wherein any one of a PCI board or PCI card each forming said PCI interface, a floppy disk, a CD-ROM, or an IC card each of which containing said updated charging processing operation program is distributed to a user for a fee or free-of-charge, said user updating said charging processing operation program in his or her PC with said new charging processing operation program.

60.   A charging system according to any one of claim 41 to claim 59, wherein said updated charging processing operation program is distributed to a user via a communication system such as the Internet.

61.   A charging system according to any one of claim 60, wherein after a user, by means of a pre-established method, made a payment for said charging processing operation program for updating, said user downloads said charging processing operation program via the Internet, and updates said charging processing operation program in his or her PC with said new charging processing operation program.

62.   A secondary cell charging method wherein a charger to which is connected either a holder part configured so as to enable acceptance and a charging processing operation separately on one of a plurality of secondary cells of various sizes requiring charging processing, or a stand part configured so as to enable acceptance and a charging processing operation of a cell package in that a plurality of secondary cell of the same size packaged within a prescribed pack, or directly of a cellular telephone with said pack built thereinto, is either built into a PC or connected externally thereto, whereby an internal power supply circuit of the PC is used as a power supply in a charging operation.

63.   A secondary cell charging method according to claim 62, wherein said charger connected to said internal power supply circuit of said PC is connected to a signal output terminal of said PC or is connected to said signal output terminal being either directly or indirectly, via an

appropriate connector and/or cable, so that a charging processing operation on a secondary cell is performed.

64. A secondary cell charging method according to claim 62 or claim 63, wherein either the secondary cell holder part or stand part is formed so as to match the dimensions or shape of each individual secondary cell.

65. A secondary cell charging method according to any one of claim 62 to claim 64, wherein said charger connected to said PC has built into it a charging processing operation program required for charging of said secondary cell.

66. A secondary cell charging method according to any one of claim 62 to claim 65, wherein said charger performs control of current from an internal power supply circuit of said PC in accordance with said charging processing operation program, so as to execute charging processing with respect to a secondary cell requiring charging processing.

67. A secondary cell charging method according to any one of claim 62 to claim 66, wherein said secondary cell charging processing operation program executes high-speed charging processing.

68. A secondary cell charging method according to claim 67, wherein said high-speed charging processing is executed with a charging current of at least 2C.

69. A secondary cell charging method according to any one of claim 62 to claim 68, wherein said charging processing operation program included in said charger is either built into said PC by inserting a floppy disk, a CD-ROM, or an IC card containing said charging processing operation program into a prescribed location of said PC, or by inserting a PCI

board or expansion board including an IC chip and PCI card therein each of which containing said charging processing operation program therein has been mounted into an expansion slot of said PC.

5   70.   A secondary cell charging method according to any one of claim 53 to claim 60, wherein said charging processing operation program has mutually different charging processing conditions from each other as set for at least one factor among a secondary cell manufacturer name, secondary cell type, model, construction, quantity, battery capacity, and internal resistance and the like of a secondary cell to be subjected to charging processing.

71.   A secondary cell charging method according to any one of claim 62 to claim 70, wherein said charging processing operation program distinguishes at least one part of a manufacturer name, secondary cell type, model, construction, quantity, battery capacity, and internal resistance and the like of a secondary cell requiring charging processing and also displays said information on a display means of said PC.

72.   A secondary cell charging method according to any one of claim 62 to claim 71, wherein user uses an appropriate input means associated with said PC to input information regarding a secondary cell requiring charging processing and inserted in said holder part or said stand, said information being displayed on a display means of said PC.

73.   A secondary cell charging method according to any one of claim 62 to claim 72, wherein a user, based on information regarding a secondary cell requiring charging processing sets various conditions necessary to be required for

charging said secondary cell by selecting same from a large number of alternatives displayed on a display screen of said PC.

74.   A secondary cell charging method according to any one of claim 62 to claim 73, wherein in said PC, from information regarding said secondary cell requiring charging processing recognized by said PC, or from information regarding said secondary cell requiring charging processing input by a user via said input means, a charging processing operation program having charging processing conditions most suited for said secondary cell required charging processing is selected from a plurality of charging processing operation programs stored within said charger, and displayed on said display means.

75.   A secondary cell charging method according to any one of claim 62 to claim 74, wherein a predicted charging characteristics graph with regard to charging operation conditions for said selected secondary cell requiring charging processing is displayed on said display means of said PC.

76.   A secondary cell charging method according to any one of claim 62 to claim 75, wherein said predicted charging characteristics graph indicates a relationship between a battery voltage and a charging time or a relationship between a battery temperature and a charging time.

77.   A secondary cell charging method according to any one of claim 62 to claim 76, wherein a display means of said PC displays at least one of a name of a battery manufacturer ,a kind of battery, a battery type, battery capacity, quantity thereof, a capacitance thereof, charging

rate, a charging power supply and internal resistance and the like with regard to charging operation conditions for said selected secondary cell requiring charging processing, and a display that distinguishes between the start of charging

5 and charging in progress, and further displays during said charging operation on said secondary cell either a separate display of a battery voltage and battery temperature, which vary with the elapse of processing time, or displays a graph indicating a relationship between a battery voltage and a

10 charging time or a relationship between a battery temperature and a charging time.

78. A secondary cell charging method according to any one of claim 62 to claim 77, wherein a notification means is provided which, after a start of a prescribed charging

15 processing operation under selected charging conditions with respect to a selected secondary cell requiring charging processing, in a case in which said charging operation is completed, makes notification to a user of said completion.

79. A secondary cell charging method according to any one

20 of claim 62 to claim 78, wherein said charging processing operation program has a separate settings of charging processing conditions for all secondary cell currently existing to be subjected to charging processing, respectively.

25 80. A secondary cell charging method according to any one of claim 62 to claim 79, wherein said charging processing operation program is created that is suitable for charging processing of a new secondary cell each time a new secondary cell is marketed, said program being added to an existing

charging processing operation program by updating processing.

81. A secondary cell charging method according to any one of claim 62 to claim 80, wherein any one of a PCI board or PCI card each forming said PCI interface, a floppy disk, a CD-ROM, or an IC card each of which containing said updated charging processing operation program is distributed to a user for a fee or free-of-charge, said user updating said charging processing operation program in is or her PC with said new charging processing operation program.

82. A secondary cell charging method according to any one of claim 62 to claim 81, wherein said updated charging processing operation program is distributed to a user via a communication system such as the Internet.

83. A secondary cell charging method according to claim 82, wherein after a user, by means of a pre-established method, makes a payment for said charging processing operation program for updating, said user downloads said charging processing operation program via the Internet, and updates said charging processing operation program in his or her PC with said new charging processing operation program.

84. A secondary cell charging method according to any one of claim 62 to claim 83, wherein past charging processing information with respect to each individual secondary cell is stored as historical information.

85. A secondary cell charging method according to claim 84, wherein a storage means is provided for each individual secondary cell, and wherein past charging processing information for each individual secondary cell is stored in

said storage means as historical information.

86.   A method for charging a secondary cell in a charging
system comprising a PC with an internal power supply circuit,
a charger, including a charging processing operation program
5 using said internal power supply circuit of said PC as a power
supply in performing a charging operation, a display means
connected to said PC, an input means connected to said PC,
an input means connected to said PC, a controller for
causing said PC including said charger, to drive, an external
10 power supply means for driving said PC, and a battery holding
apparatus connected to said charger for holding a secondary
cell, said secondary cell charging method comprising:

a battery list generation step of analyzing at
least a part of a name of battery manufacturer, a kind of
15 a battery, a battery type, model, ratings, capacity, output
voltage, charging/discharging characteristics, and internal
resistance and the like of all currently existing chargeable
secondary cells, establishing optimum charging processing
operation conditions for each said individual secondary cell,
20 and generating a list thereof;

a step of storing said battery list into a
prescribed storage means of said PC;

a step of starting software, including said
charging processing operation program;

25 a step of inserting a secondary cell requiring
charging processing into a holding means of said charger;

a step of said charging processing operation
program distinguishing information with regard to said
secondary cell requiring a charging operation inserted in

said charger, selecting from said battery list a charging processing operation program suitable for a charging operation of said secondary cell, and of displaying said selected charging processing operation program on said
5   display means, together with a charging graph or other battery information;

a step of inputting a number of secondary cells to be charged simultaneously;

a step of verifying charging conditions on a
10   screen of said display means, and then starting a charging operation;

a step during a charging processing operation of either causing drive of an alarm means, which makes notification that a charging processing operation is in
15   progress, or causing a dynamic display of a charging graph on said display means, and

a step, in a case in which said charging processing operation on said secondary cell is completed, of performing a display indicating that said charging processing
20   operation has been completed.

87.   A method for charging a secondary cell in a charging system comprising a PC with an internal power supply circuit, a charger, including a charging processing operation program using said internal power supply circuit of said PC as a power
25   supply in performing a charging operation, a display means connected to said PC, an input means connected to said PC, a controller for causing said PC to drive, an external power supply means for driving said PC, and a battery holding apparatus connected to said charger for holding a secondary

cell, said secondary cell charging method comprising:

a battery list generation step of analyzing at least a part of a battery manufacturer, a battery type, model, ratings, capacity, output voltage, charging/discharging characteristics, and internal resistance and the like of all currently existing chargeable secondary cells, respectively, establishing optimum charging processing operation conditions for each individual secondary cell, respectively, and generating a list thereof;

a step of storing said battery list into a prescribed storage means of said PC;

a step of starting software, including said charging processing operation program;

a step of inserting a secondary cell requiring charging processing into said holding apparatus connected to said charger;

a step of, in accordance with information with regard to a secondary cell requiring charging processing, selecting a charging processing operation program suitable for a secondary cell requiring a charging processing operation from said battery list;

a step of displaying a charging graph;

a step of inputting a number of secondary cells to be charged simultaneously;

a step of verifying charging conditions on a screen of the display means, and then starting a charging operation;

a step during a charging processing operation of either causing drive of an alarm means, which makes

notification that a charging processing operation is in progress, or causing a dynamic display of a charging graph on said display means; and

a step in a case in which said charging
5 processing operation on said secondary cell is completed of performing a display indicating that said charging processing operation has been completed.

88. A secondary cell charging method in a charging system comprising a PC with an internal power supply circuit, a
10 charger, including a charging processing operation program using said internal power supply circuit of said PC as a power supply in performing a charging operation, a display means connected to said PC, an input means connected to said PC, a controller for causing said PC to drive, and an external
15 power supply means for driving said PC, said secondary cell charging method comprising:

a battery list generation step of analyzing at least one of a battery manufacturer name, battery type, model, ratings, capacity, output voltage, charging/discharging
20 characteristics, and internal resistance and the like of each one of all currently existing chargeable secondary cells, establishing optimum charging processing operation conditions for each individual secondary cell, respectively, and generating a list thereof;

25 a step of storing said battery list into a prescribed storage means of said PC;

a step of starting software, including said charging processing operation program;

a step of inserting a secondary cell requiring

charging processing into said a holding apparatus of said charger;

a step of a user using said input means to input separately to said PC at least a part of a battery manufacturer name, battery type, battery voltage, battery capacity, charging rate, and internal resistance and the like for a secondary cell requiring charging processing;

a step of said PC selecting from said battery list, based on said input information, a charging processing operation program suitable for said secondary cell requiring a charging processing operation;

a step of displaying a charging graph;

a step of inputting a number of secondary cells to be charged simultaneously;

a step of verifying charging conditions on a screen of said display means, and then starting a charging operation;

a step during a charging processing operation of either causing drive of an alarm means, which makes notification that a charging processing operation is in progress, or causing a dynamic display of a charging graph on said display means; and

a step in a case in which said charging processing operation on said secondary cell is completed of performing a display indicating that said charging processing operation has been completed.

89.   A charging method according to any one of claim 62 to claim 88, wherein a provider of said charging processing operation program discloses optimum charging processing

conditions or a charging processing operation program for a prescribed secondary cell on a web page via the Internet, so that any user can access said provider of said charging processing operation program and receive distribution of said charging processing operation program via said Internet.

5   90.   A method for charging according to any one of claim 62 to claim 89, wherein a provider of said charging processing operation program discloses optimum charging processing conditions or a charging processing operation program for a prescribed secondary cell on a web page via the Internet, and

10 wherein a user executes placement of an order and remittance of payment therefor via said Internet, whereupon a floppy disk, CD-ROM, IC card, or expansion board onto which is installed an IC chip containing said charging processing operation

15 program required for execution thereof is sent to said user.

  91.   A charging method according to any one of claim 62 to claim 90, wherein a provider of said charging processing operation program discloses optimum charging processing conditions or a charging processing operation program for a

20 prescribed secondary cell on a web page via the Internet that is at all times the latest optimum charging processing conditions or the latest charging processing operation program, so that a user can execute placement of an order and remittance of payment therefor via the Internet, enabling

25 said user to download said latest charging processing conditions or said latest charging processing operation program to his or her PC, thereby maintaining a latest charging processing operation environment on his or her PC.

  92.   A storage medium onto which is stored a program for

the purpose of causing a computer to execute a charging method recited in any one of claim 86 to claim 91.

93.   A secondary cell charging apparatus according to any one of claim 1 to claim 92, wherein said charger selected from a group consisting of an international PCI (PC interface) standard selecting from either one of a PCI board or PCI card each including said charging processing operation program therein , an IC chip mounted on an expansion board or the like, a CD-ROM, a floppy disk, an IC card each including said charging processing operation program therein and a PC hard disk (HD) onto which said charging processing operation program has been installed, is formed a kit with a predetermined battery holder means and a predetermined operation manual of said charger so as to be sold publicly.

94.   A secondary cell charging apparatus according to claim 93, wherein said kit is individually formed based upon an application to which said secondary cell battery to be charged being used, respectively.

95.   A secondary cell charging system which comprising the steps of;

creating a charging processing operation program used for each one of various kinds of secondary cell batteries to be charged, respectively;

storing said charging processing operation program created for each one of various kinds of secondary cell batteries to be charged, respectively, into a predetermined memory medium;

opening said charging processing operation program to the public through an communication net works or by printing out same on a hard storing medium;

preparing said charging processing operation program suitable for an user's intention, when said user having a PC had accessed to this system;

asking said user to pay a predetermined necessary expenses

5 through a predetermined payment system by a business entity providing said system to the public; providing said charging processing operation program to said user by distributing system or through said communication net works, when said business entity had confirmed that said user had

10 said predetermined expenses through said predetermined payment system;

installing or down loading said charging processing operation program by said user into a PC owned by said user;

performing charging processing operation for a

15 predetermined secondary cell battery by said user utilizing said charging processing operation program; and

updating said charging processing operation program by said user with a new version of said charging processing operation program which would arbitrarily be down-loaded by

20 said user.